

SEAT BELT USE ON NORTH DAKOTA RURAL ROADS

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North Dakota Law Enforcement Summit
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Overview

- Background – Why Seat Belts on Rural Roads?
- Other Surveys/Data Sources
- Initial Work
- Current Method
- Results
- Discussion



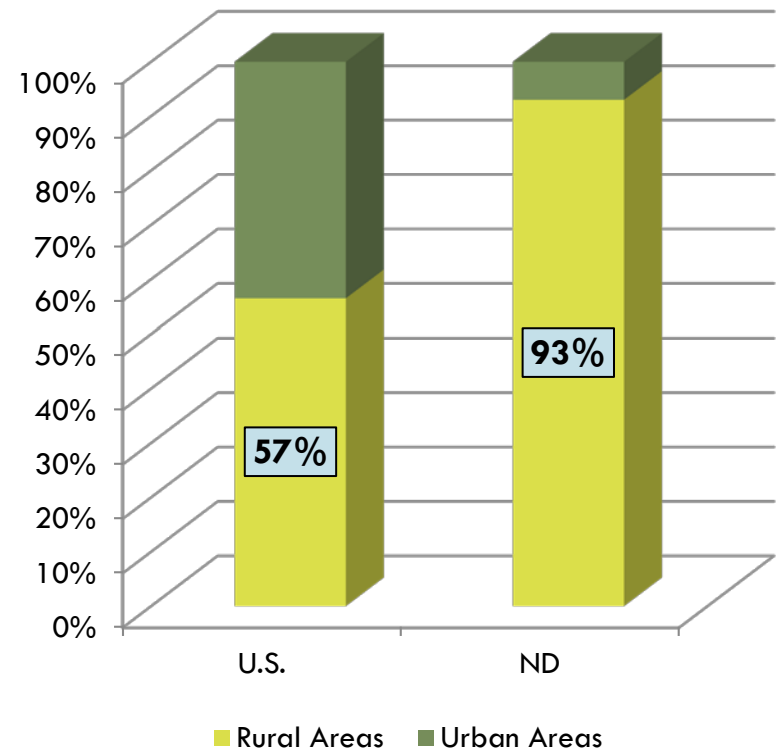


“But, officer, I AM wearing a seat belt.”

Crash Injury Risk

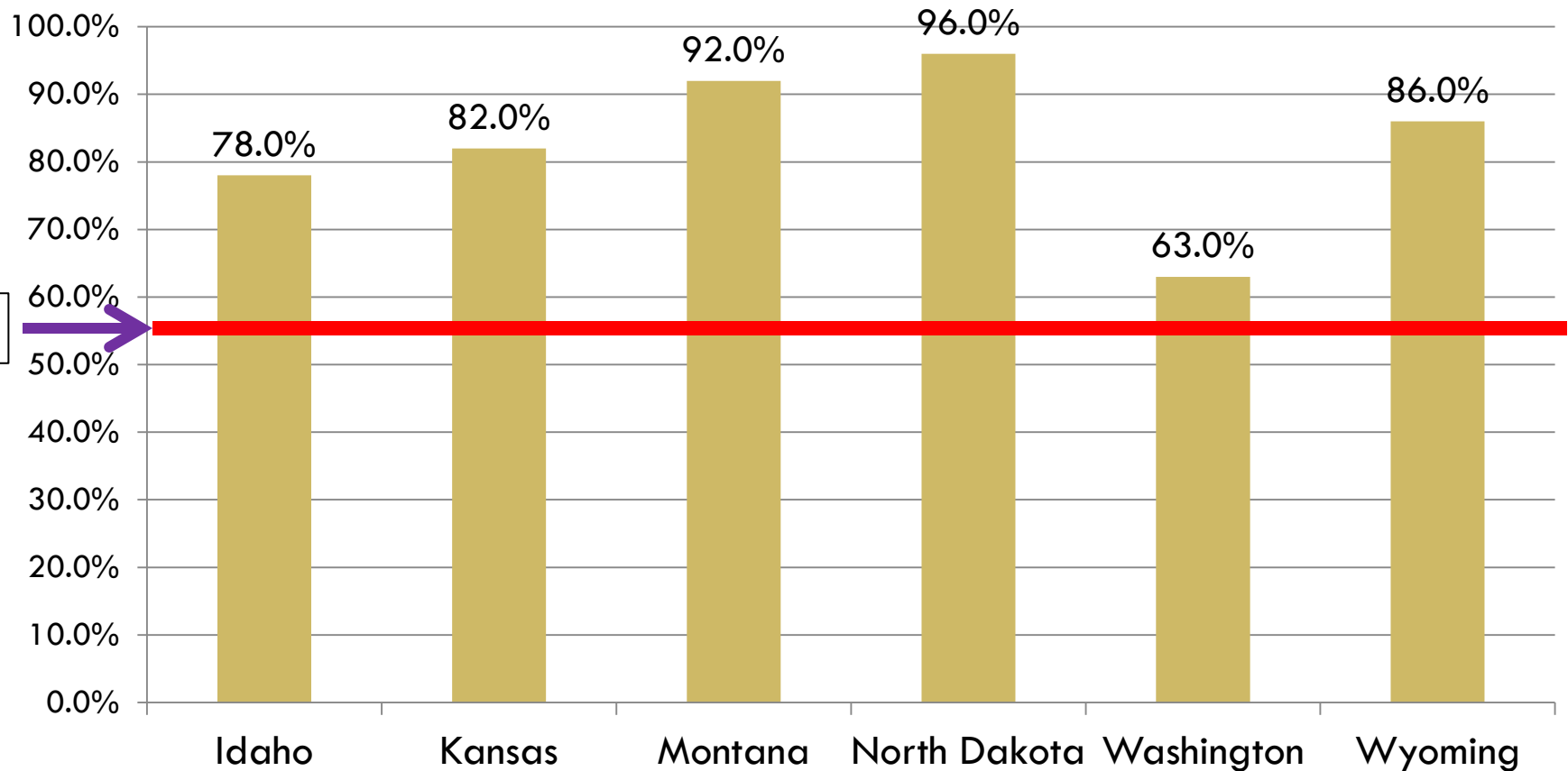
- 54% of North Dakota's vehicle-miles traveled take place on rural roads
- From 2005 to 2009 93% of crash fatalities occurred on rural roads
- 25% of nation's vehicle miles traveled are on rural roads, accounting for 57% of fatalities

Crash Fatalities by Land Area:
2005-2009



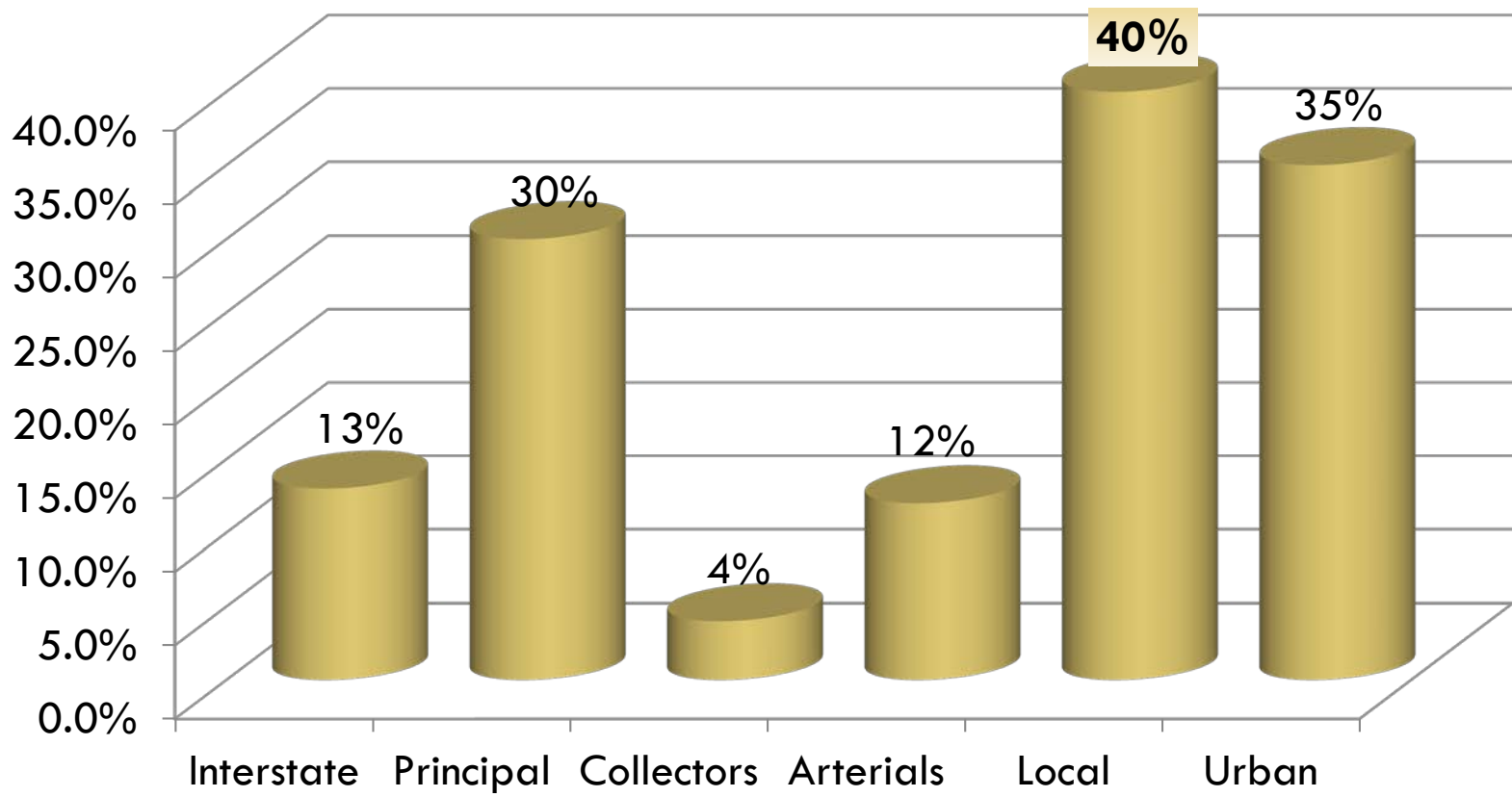
Source: Fatality Analysis Reporting System

% Rural Fatalities - Comparison States: 2009



ND Serious Injury Crash Location by Road Class, 2005-2009

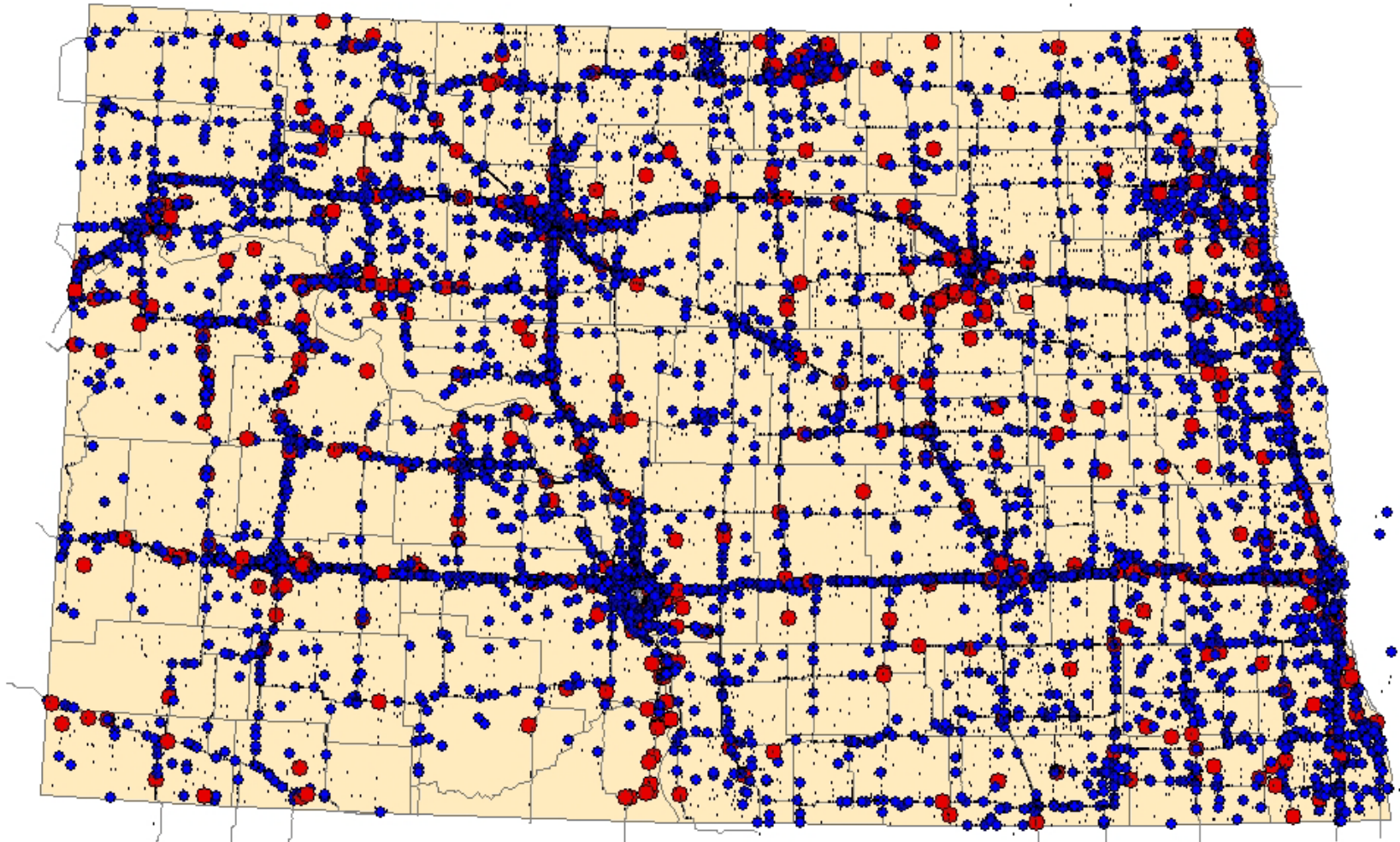
Note: Serious injury includes fatal and disabling injuries.



Such as County or Township roads



ND Local Road Crashes: 2006-2010



ND Crashes 2006-2010: Local Roads Only – no towns

Red = Fatal; Blue = Injury

How Effective Are Seat Belts at Preventing Injury/Fatality?



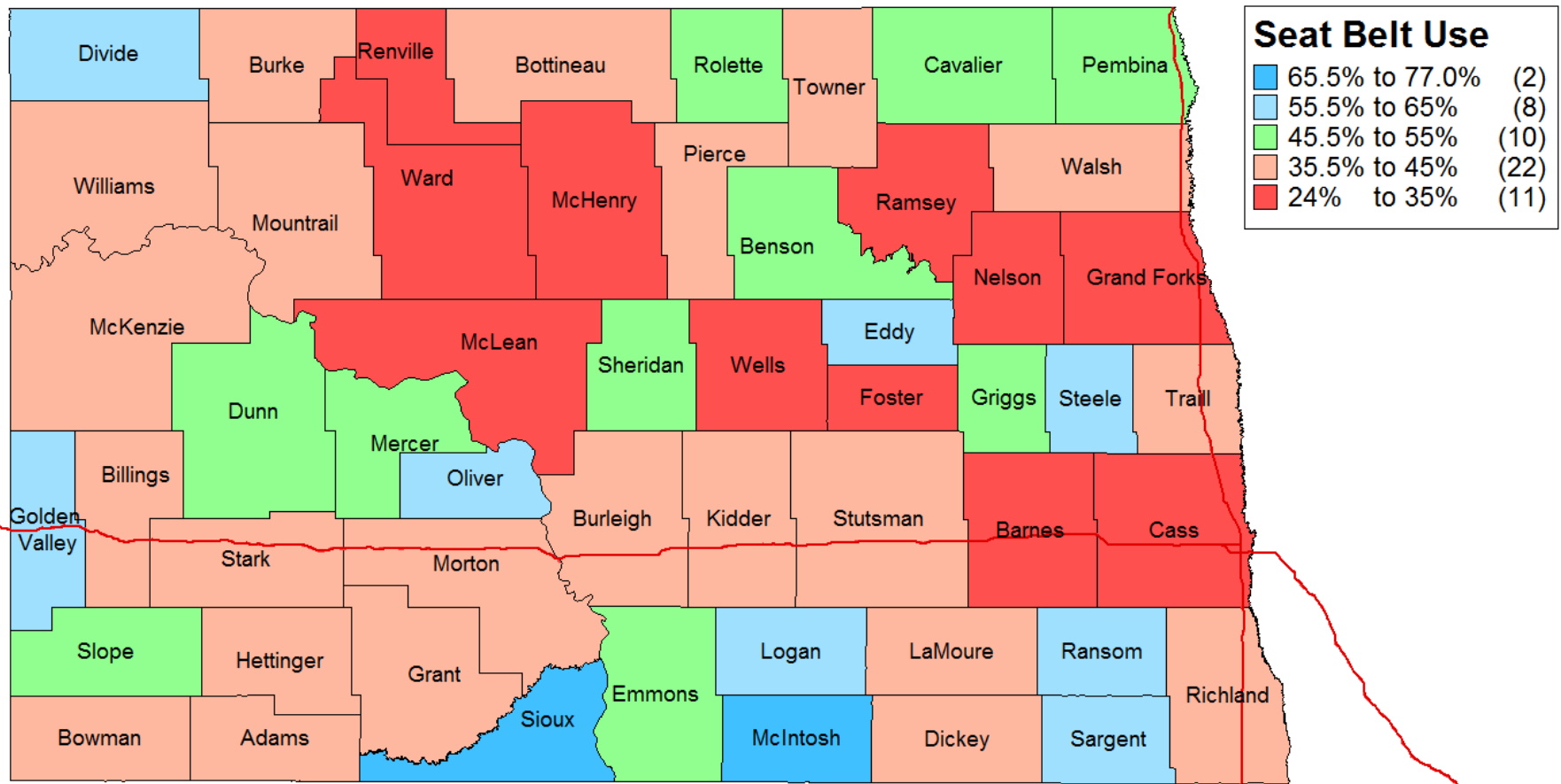
Occupant Protection

- How effective are seat belts at preventing injury/fatality?
 - ▣ Reduce the risk of fatal injury to front seat occupants by 45% to 60%
 - ▣ Reduces the risk of ejections – the most injurious event in a crash
 - 2009 – 77% of those ejected from vehicles were killed
 - Who were most likely to be ejected?
 - 1% restrained vs 31% unrestrained

Source: NHTSA. (2010). *Traffic Safety Facts, 2009 Data – Occupant Protection*. <http://www-nrd.nhtsa.dot.gov/Pubs/811390.pdf>.

Seat Belt Use for Rural Road Injury Crashes by County: 2006-2010

Source: NDDOT Crash Data



Interventions to Increase Seat Belt Use

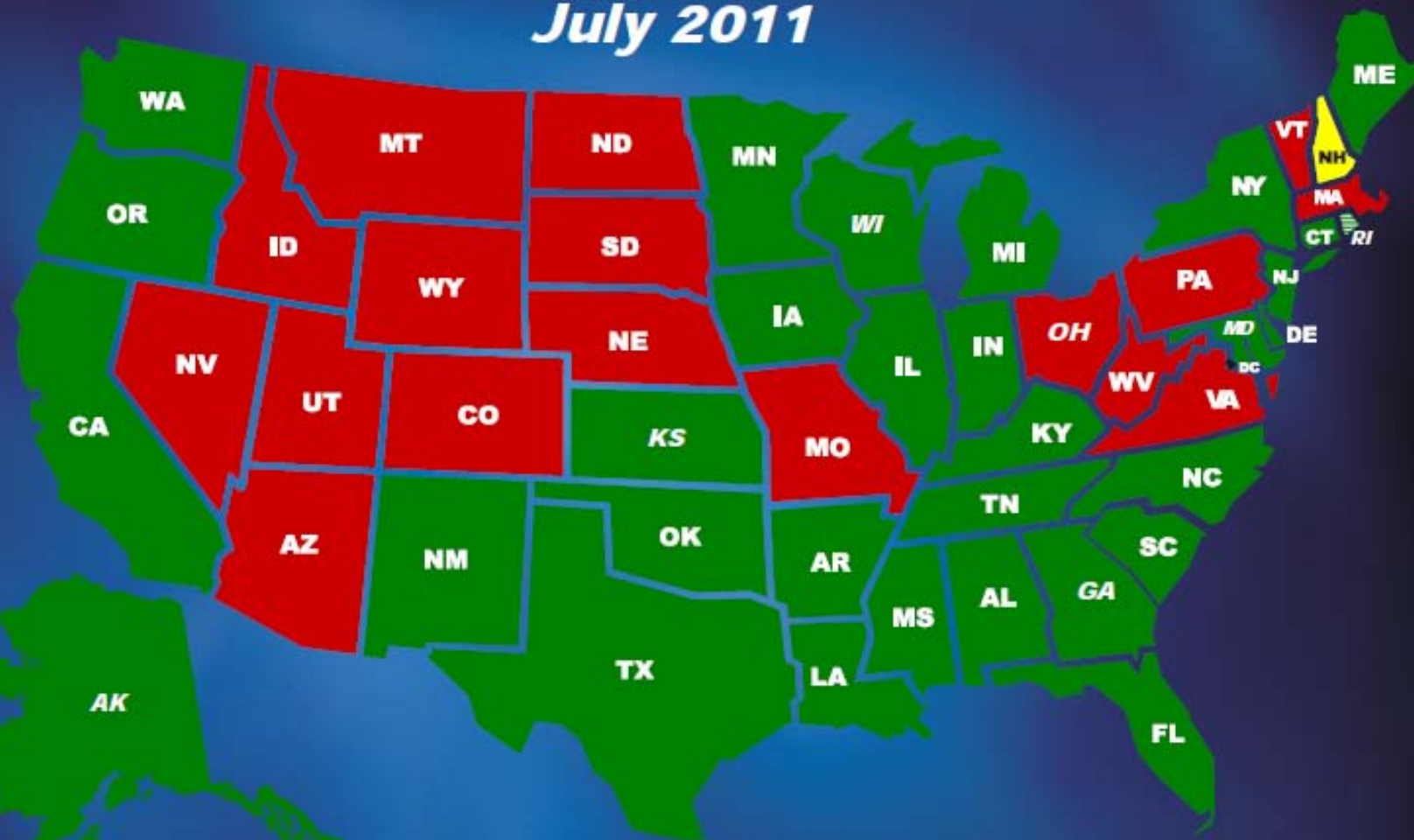


Intervention: Seat Belt Laws

- Primary enforcement laws have been shown to be effective for increasing overall levels of seat belt use (Beck and Shults 2009)

State Seat Belt Laws

July 2011



 **Primary Law**

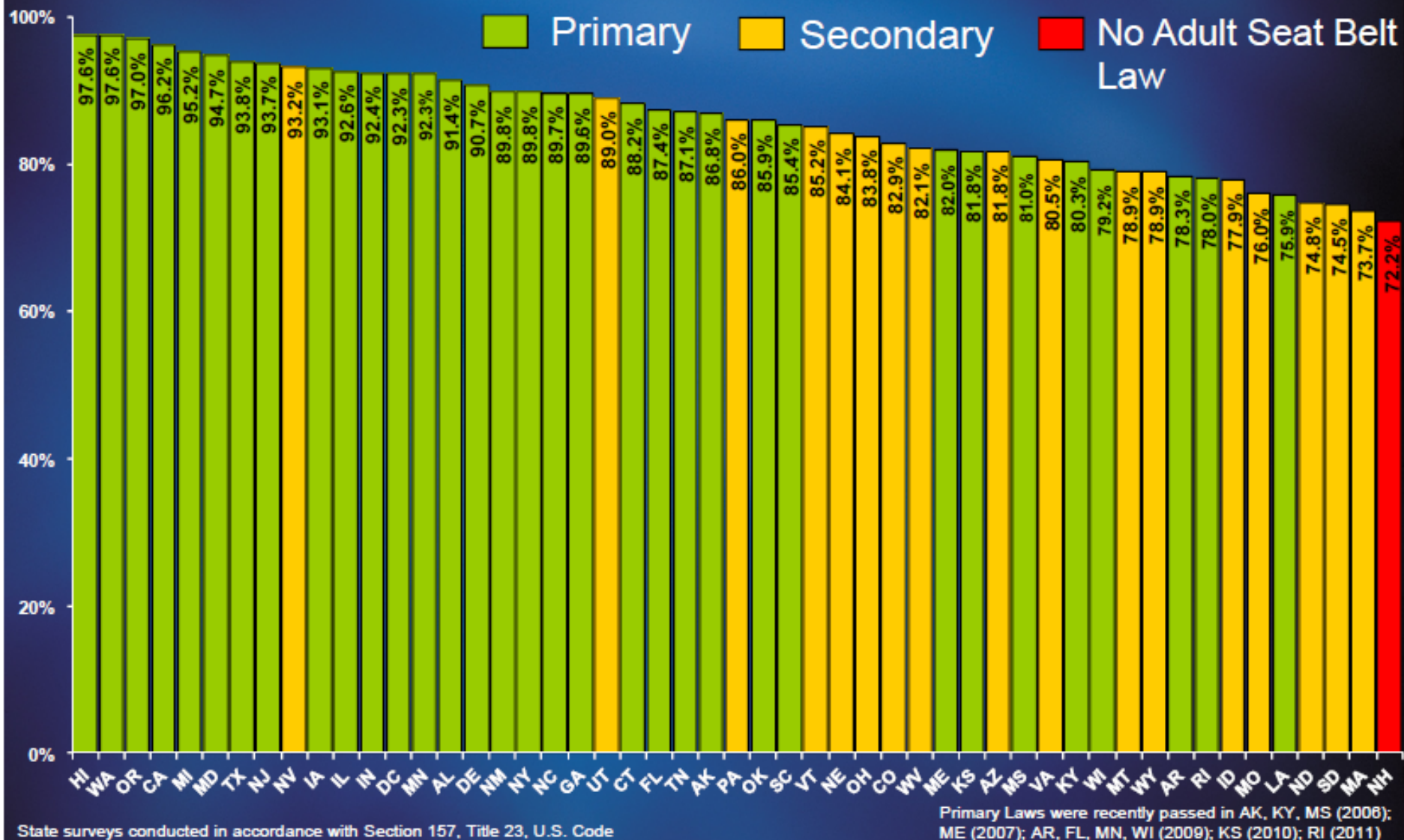
 **No Adult
Seat Belt Law**

 **Secondary Law**

 **2011 Upgrade**

 **PR**

2010 Seat Belt Use Rates By Law Type and State



Intervention: Enhanced Enforcement

- Enhanced enforcement has been shown to be effective at increasing seat belt use (Dinh-Zarr et al. 2001; Beck and Shults 2009)
- Including increasing number of patrol officers and checkpoints



Click it or Ticket campaign sites 76 people

Click It or Ticket campaign under way

Story

Discussion

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By REBECCA BEITSCH Bismarck Tribune | Posted: Monday, May 23, 2011 6:00 pm | (26) Comments



WILL KINCAID WILL KINCAID/Tribune
Mark Nelson, NDDOT safety division director, talks about the department's increased seat belt enforcement campaign during a news conference on Monday.

Buy this photo

Officers across North Dakota will be stepping up their enforcement of seat belt laws during the annual Click It or Ticket campaign.

The campaign runs through June 5. Officers will be present in greater numbers and plan to write citations for those caught not wearing their seat belts.

Not wearing a seat belt is only a primary offense for minors, meaning those 18 and older would have to be pulled over for another reason before getting a ticket for not wearing a seat belt.

Mark Nelson, safety division director for the state Department of Transportation, said the campaign is to remind people that in addition to the possible tragic repercussions, there are penalties for not wearing a seat belt.

Nelson said more than 60 local and state law enforcement officials will be on the road as part of a "saturation effort." The officers are being reminded to pay extra attention to whether occupants are wearing seat belts when they pull vehicles over.

"Always buckle up, make passengers buckle up, and don't settle for your passengers not buckling up. We all have to play a role," Nelson said.

A speeding ticket in North Dakota is \$20, but there

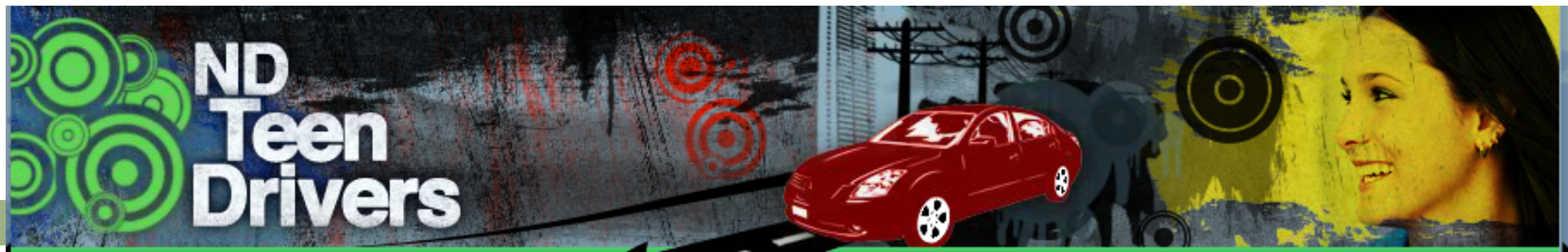
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Intervention: Mass Media Campaigns





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Traffic S

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Rollover S

Safety is the number one priority for the North Dakota Department of Transportation (NDDOT) to emphasize the importance of seatbelt use. A Rollover Simulator recreates a rollover crash. The simulator is a half-truck up to 30 miles per hour with crash test dummies positioned in the vehicle in place of occupants. During a demonstration at a NDDOT press conference, multiple scenarios were played out to show what the outcome is when occupants wear their seatbelts as well as when they don't.

The NDDOT has created a video of this presentation to use as an educational tool demonstrating the importance of seatbelt usage.



chance! The North Dakota
Annual NDTeenDrivers
nce to win great prizes.



Seat belt use continues to be consistently lower for:

- ❑ Males
- ❑ Younger occupants
- ❑ Rural occupants
- ❑ Pick-up truck occupants

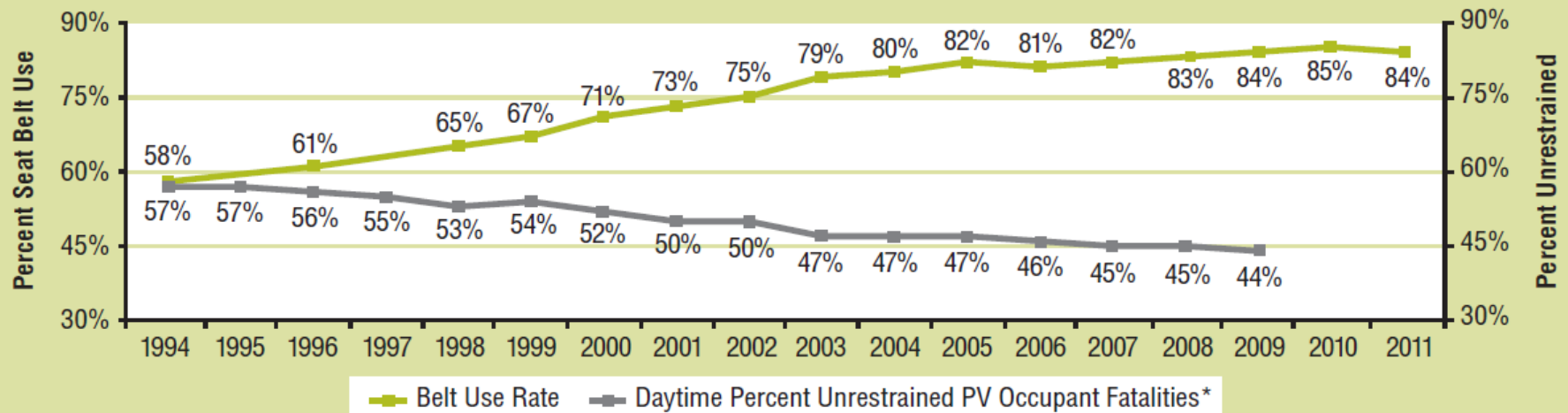


Seat Belt Use in the United States



National Trends

NOPUS Seat Belt Use Rate and Daytime Percent of Unrestrained Passenger Vehicle Occupant Fatalities



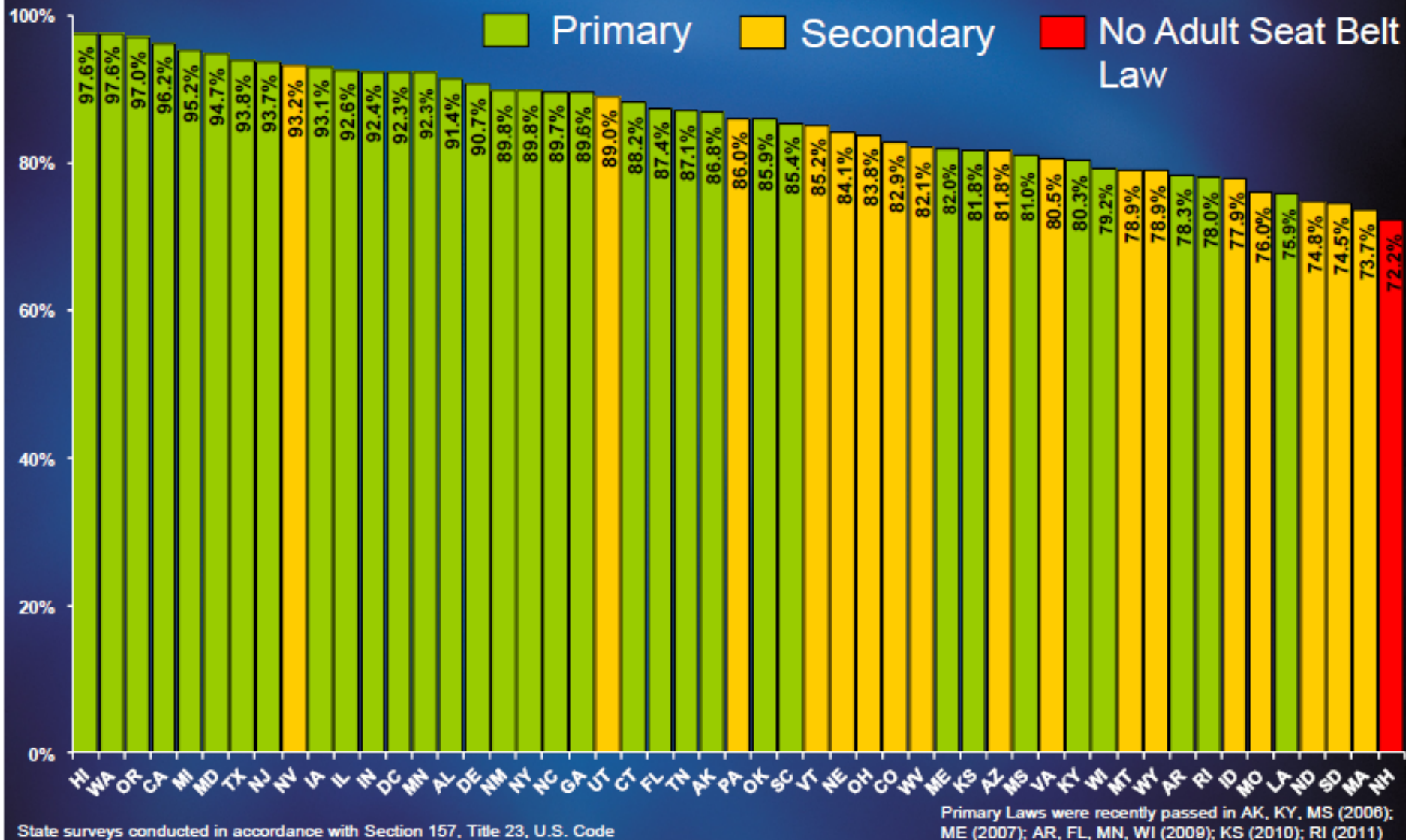
(Source: NOPUS and FARS)

*The 2010 and 2011 data on the percent of unrestrained passenger vehicle occupant fatalities during daytime are not yet available.

State Seat Belt Laws

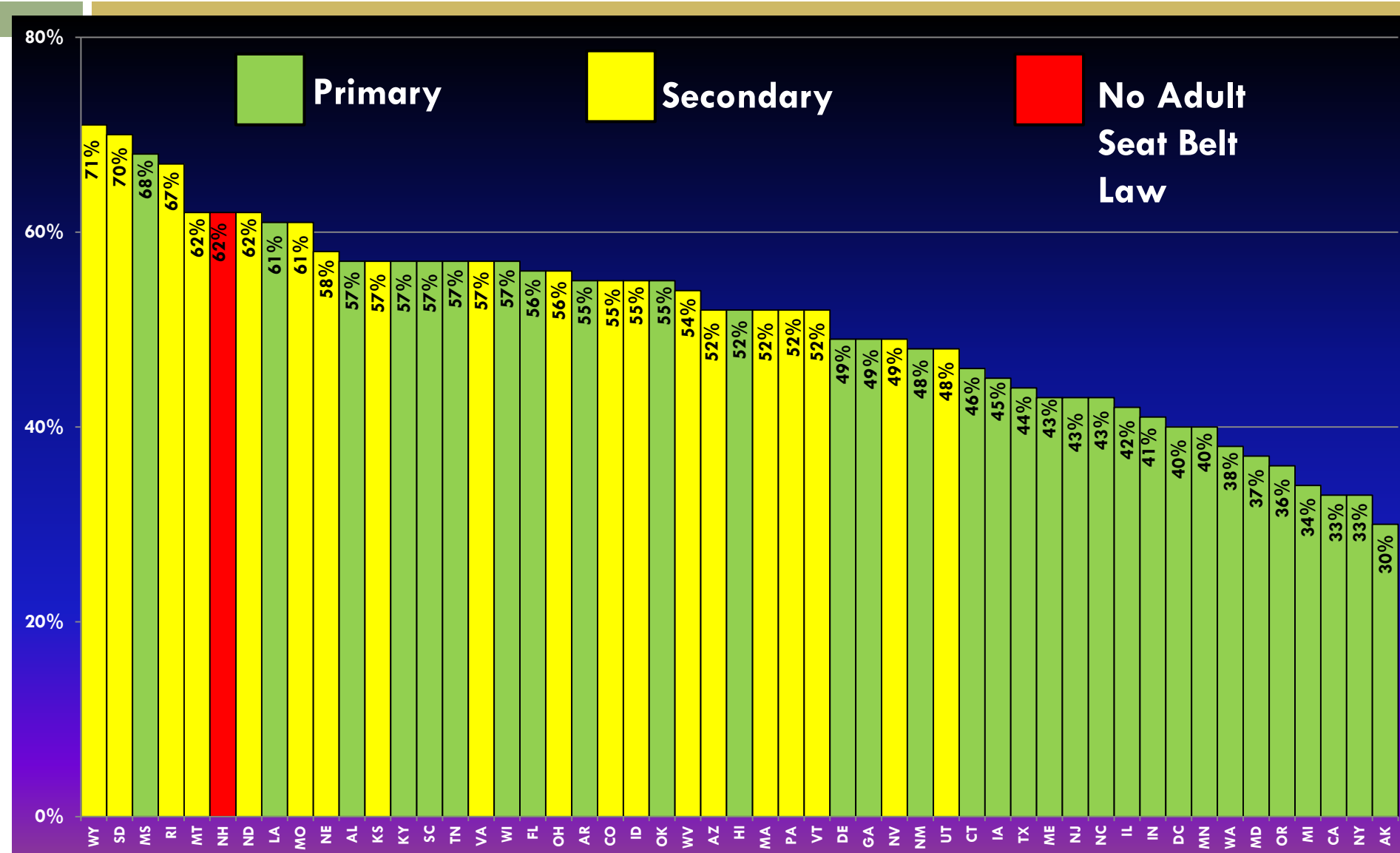
July 2011

2010 Seat Belt Use Rates By Law Type and State



% of Passenger Vehicle Fatalities that were unrestrained by law type and state: 2009 (2009 law type)

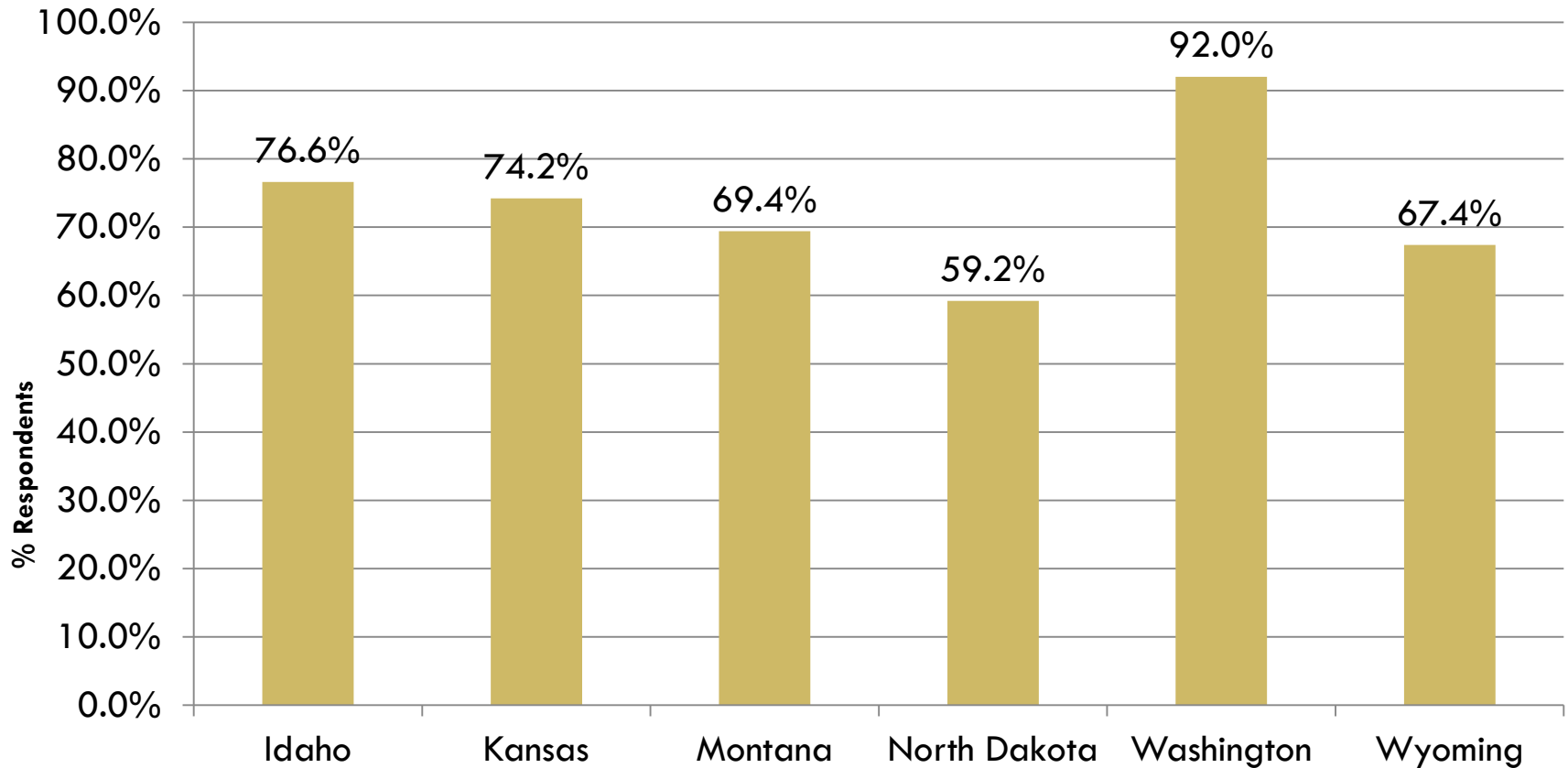
Source: NHTSA. (2010). Traffic Safety Facts, 2009 Data – Occupant Protection. <http://www.nrd.nhtsa.dot.gov/Pubs/811390.pdf>.



Other Seat Belt Use Measures

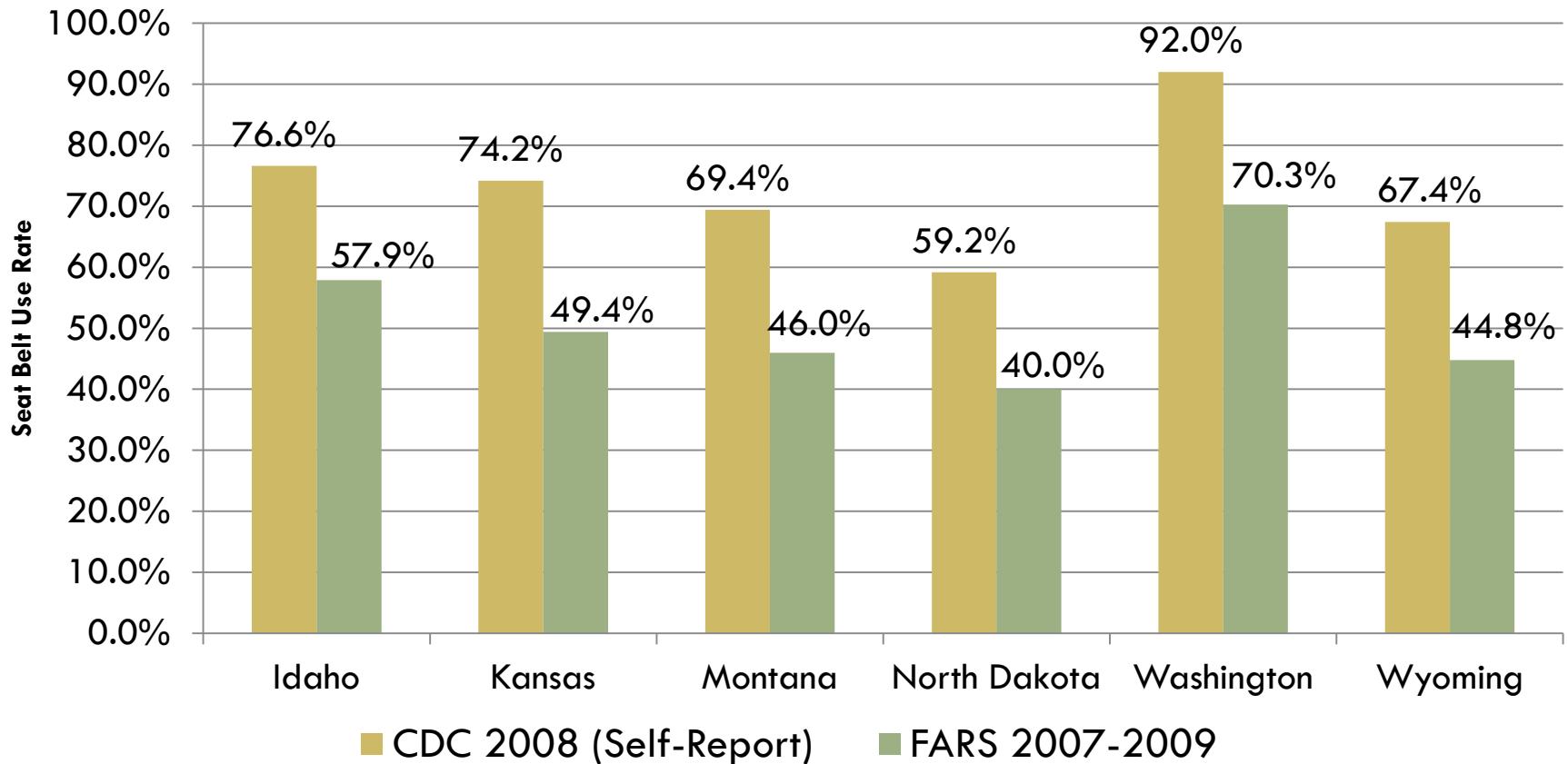


Behavioral Risk Factor Surveillance System (2008) (Self-Report)

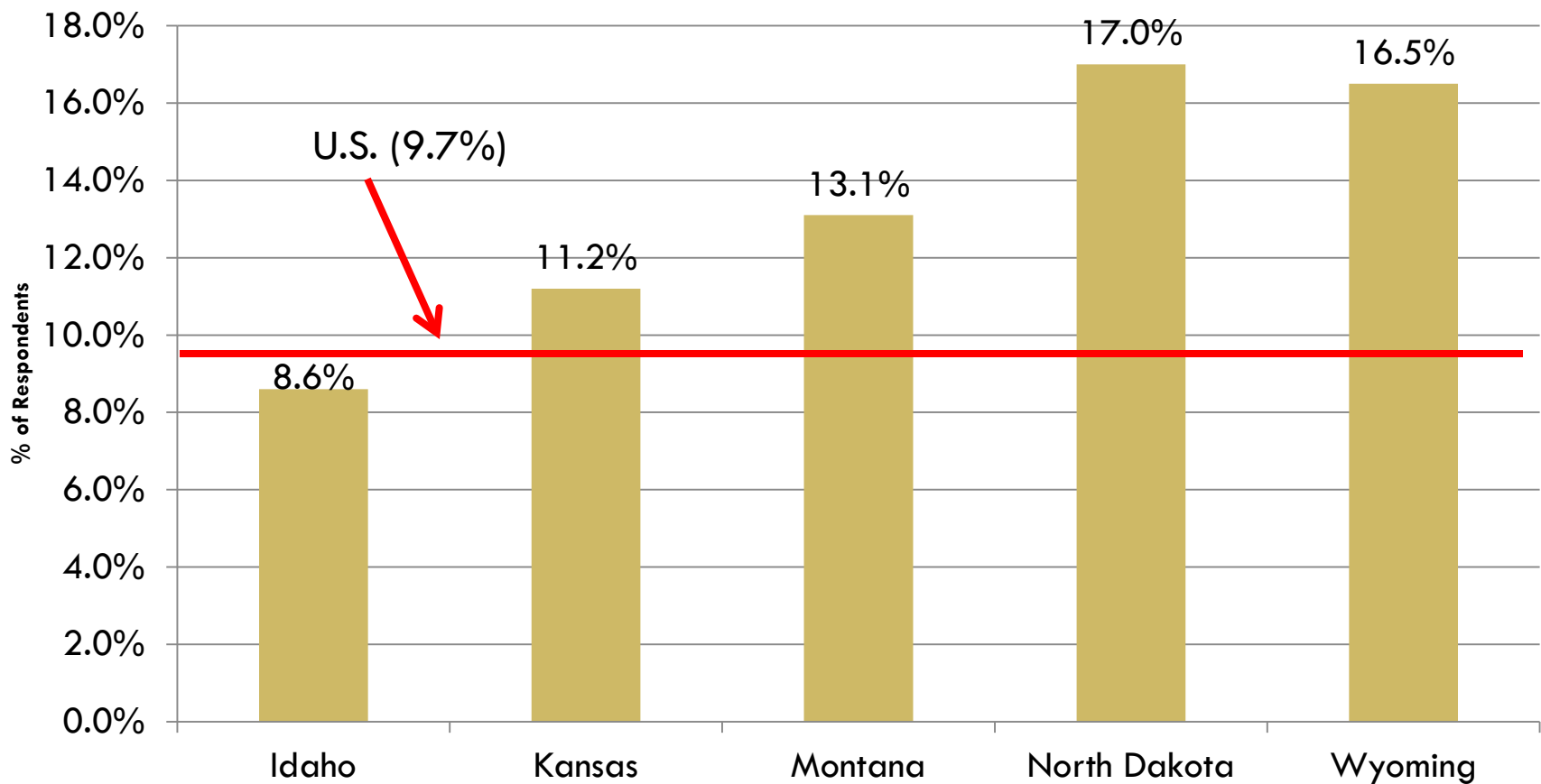


Respondents state they "Always" wore a seat belt when driving or riding in a car.

Centers for Disease Control (CDC)/ Fatality Analysis Reporting System(FARS)



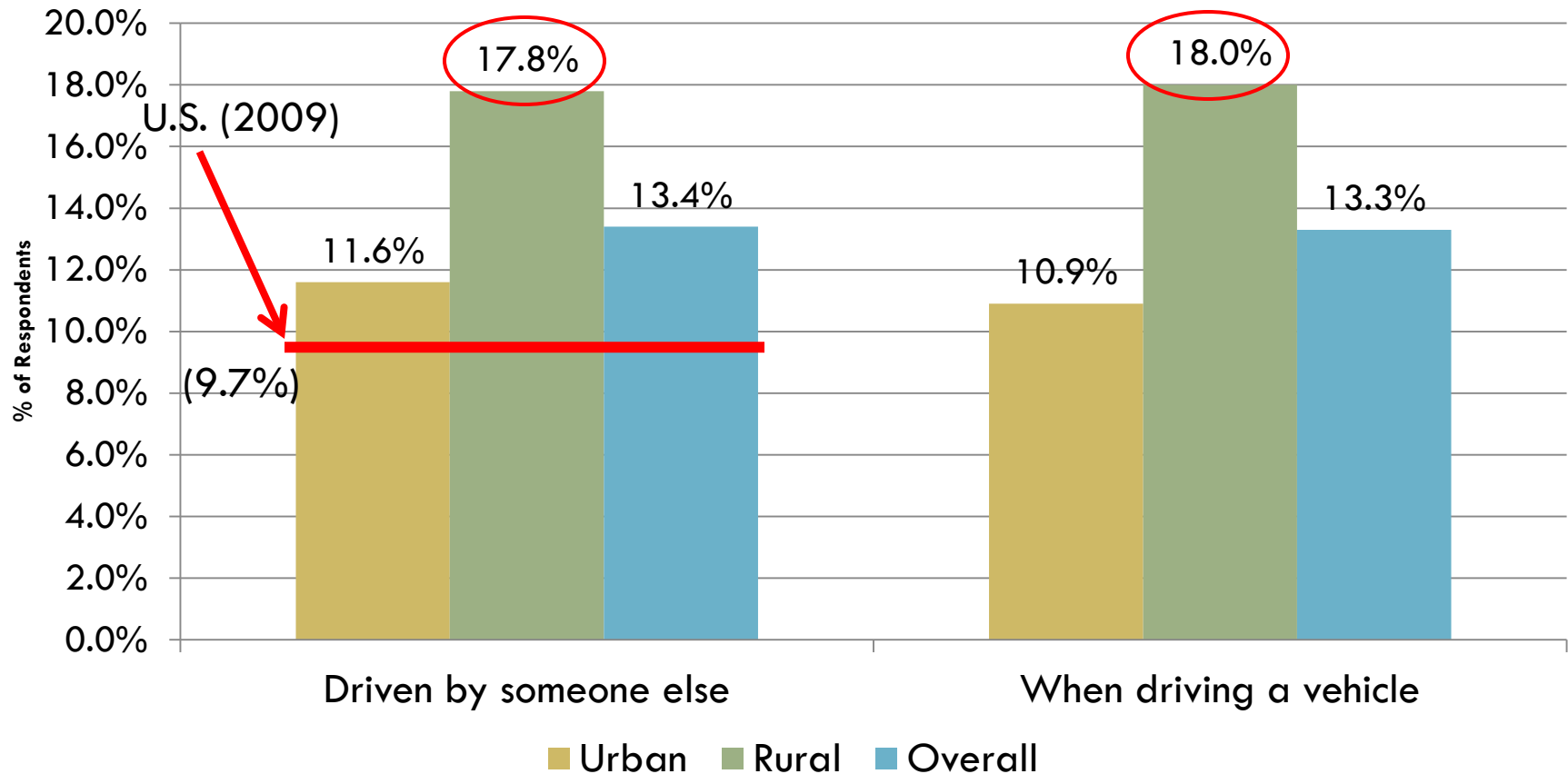
Youth Risk Behavior Survey (2009): “Rarely or Never Wore a Seat Belt”



“Rarely or Never” wore a seat belt when riding in a vehicle driven by someone else

Self Report; Includes Grades 9-12

Youth Risk Behavior Survey (2011) - ND: “Rarely or Never Wore a Seat Belt”



Self Report; Includes Grades 9-12

Seat Belt Use in North Dakota





Measuring Seat Belt Use in ND

□ Statewide Seat Belt Survey

- ▣ Required of all states
- ▣ Methodology approved by National Highway Transportation Safety Administration (NHTSA)

□ Rural Seat Belt Survey



Rural Seat Belt Pilot

- Systematic measurement to supplement anecdotal information, enforcement statistics, and motor vehicle crash seat belt reports.
- Conducted in cooperation with the NDDOT and FHWA in 2009.
- Continued 2010, 2011, and 2012 as a NDDOT TSO program activity.



Study Objectives

- ❑ Establish rural seat belt protocol
- ❑ Utilize partnerships with state and local associates to conduct seat belt observations
- ❑ Provide traffic safety offices and local officials with a measure they can use in understanding and managing rural seat belt use as a public health issue
- ❑ Measure effects of new rural high visibility enforcement (HVE) activities

Statewide Seat Belt Survey Methodology

- National Occupant Protection Use Survey (NOPUS)
 - Supported by NHTSA (National Highway Traffic Safety Administration)
 - Approved the methodology for each state

- Survey sample design uses vehicle miles traveled, so up to this point, only state roads considered
 - Methodology will be changing for the upcoming survey

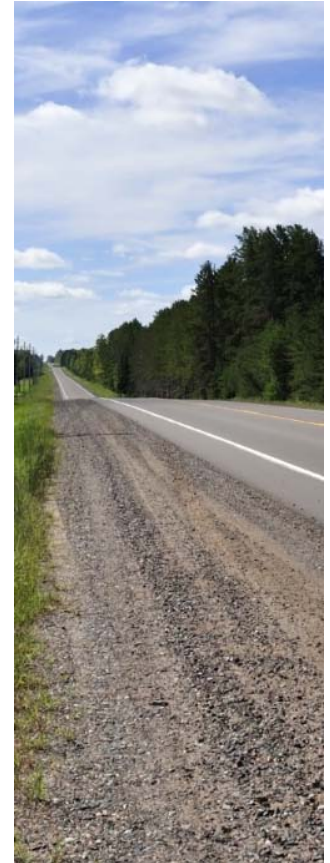
Statewide Seat Belt Survey Methodology, cont.....

- Counties stratified by population and quadrant (NE, NW, SE, SW)
 - Highest population counties (Cass, Grand Forks, Burleigh, Morton) and random sample of lower population counties included in survey
 - VMT (Vehicle Miles Traveled) used for site selection within sample counties



Rural Road Seat Belt Survey Methodology

- Traditional observation survey method
- Site selection:
 - 1 site per town – max of 2 towns in a county
 - “Higher traffic areas” to include 3-4 sites outside of towns
 - Minimum observation of 30 minutes, up to one hour, to meet minimum of 30 observations per site
 - Must be minimum of 20 miles from interstate

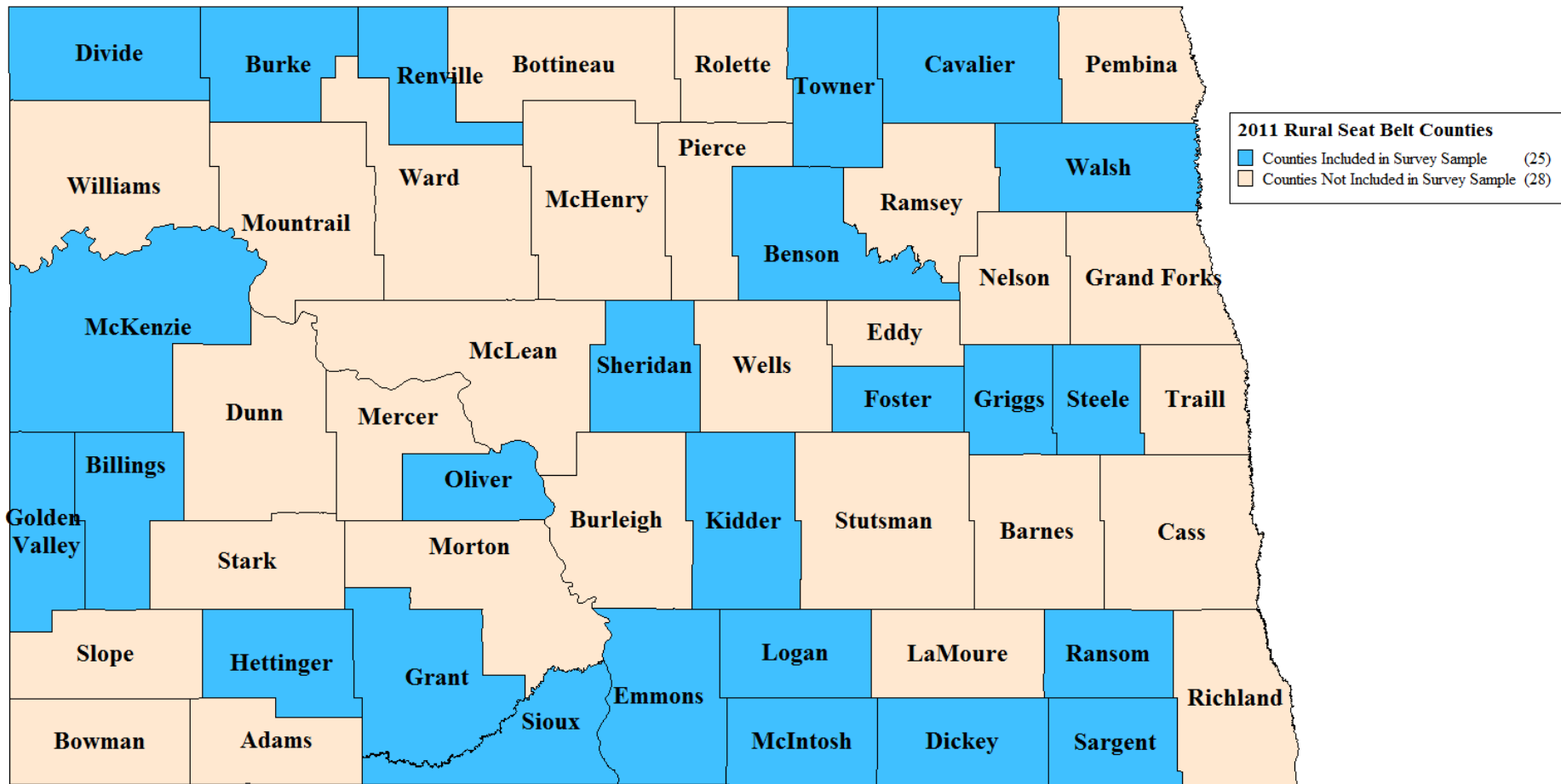


Rural Road Seat Belt Survey Methodology, cont....

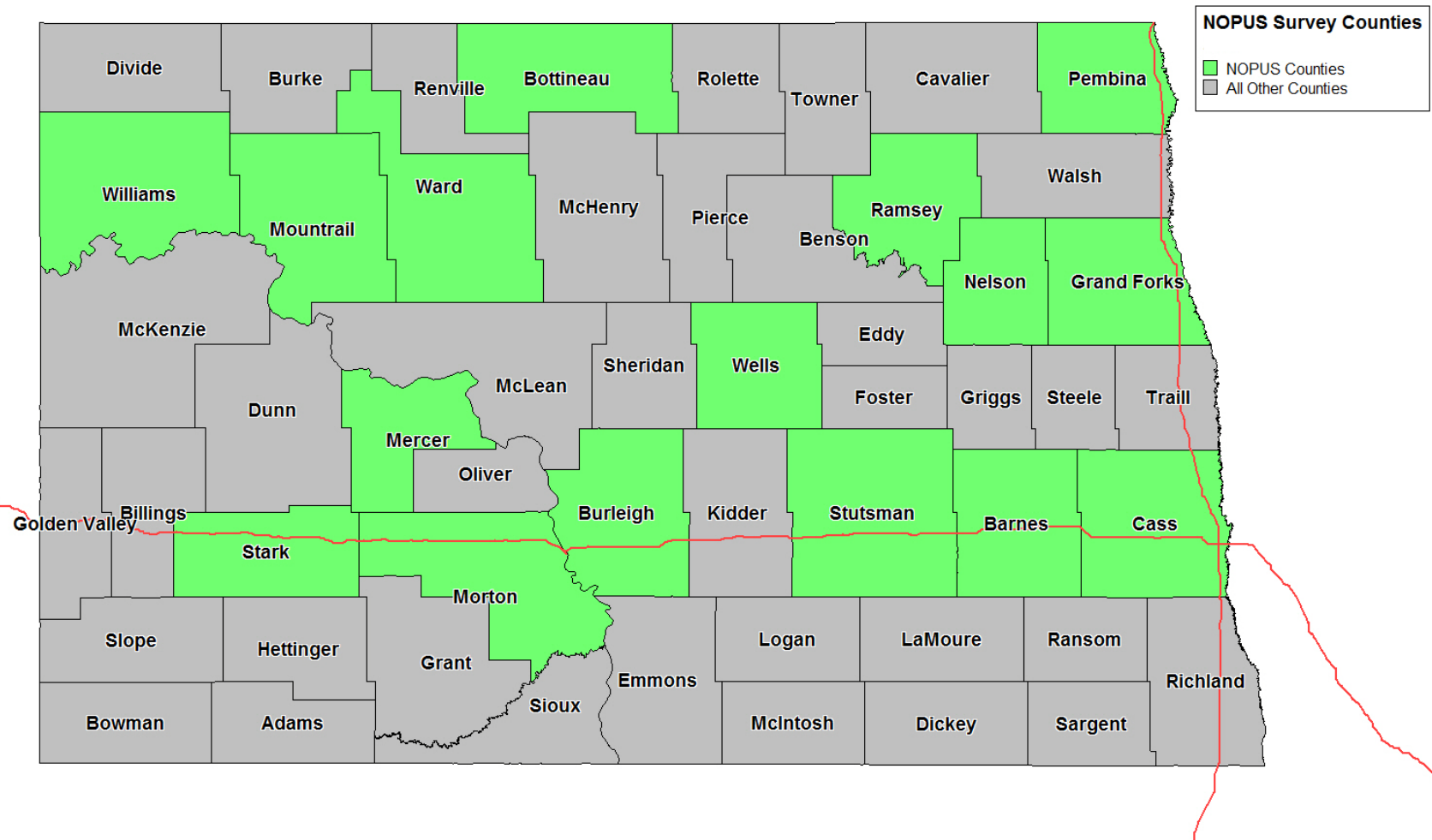
- Observations collected at each site in July and August between 7 a.m. and 7 p.m.
- Information collected:
 - ▣ Driver SB use, front outboard passenger SB use
 - ▣ Driver gender, front outboard passenger gender
 - ▣ Vehicle type (SUV, car, truck, van)



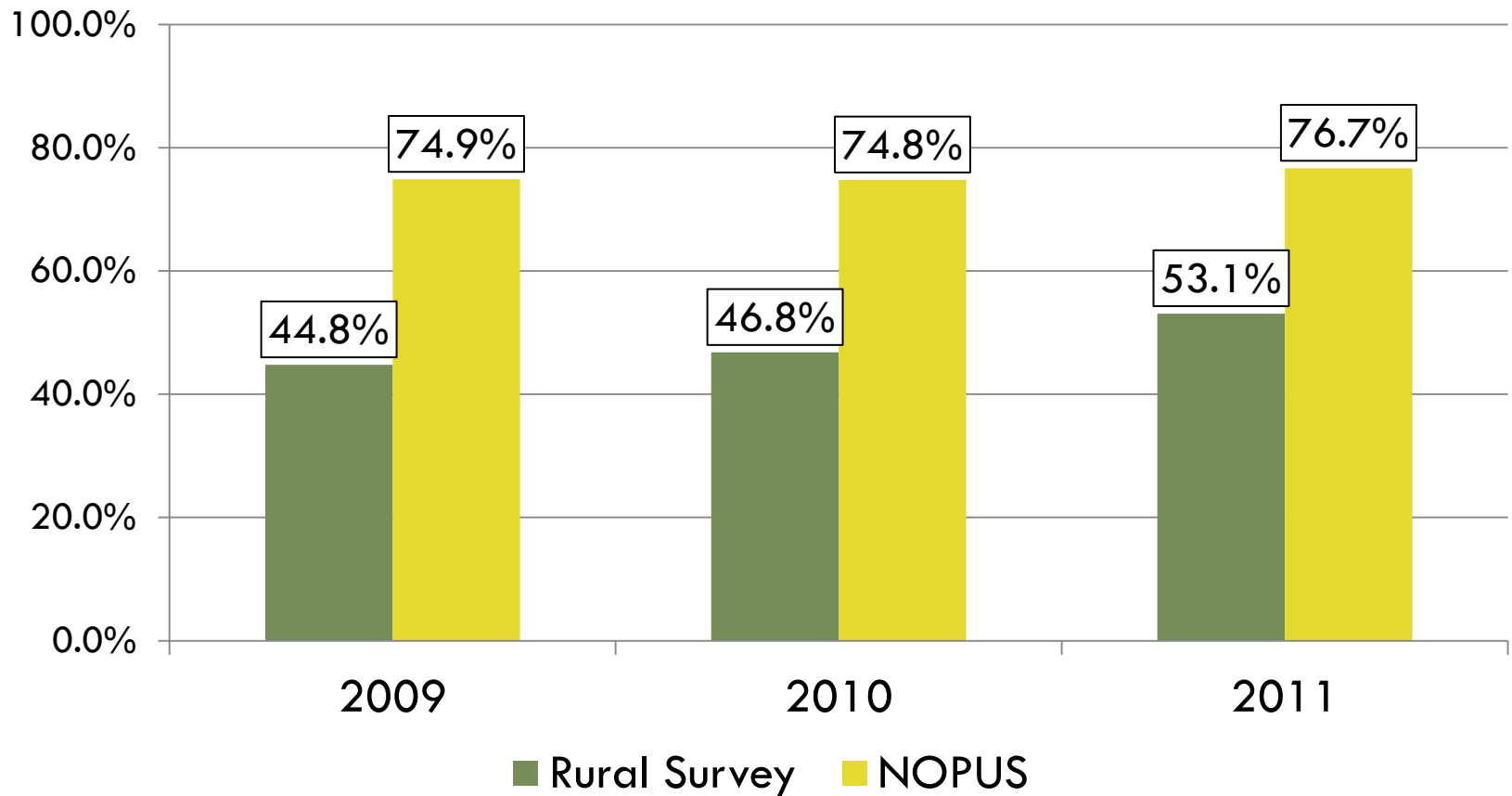
Rural Survey Counties



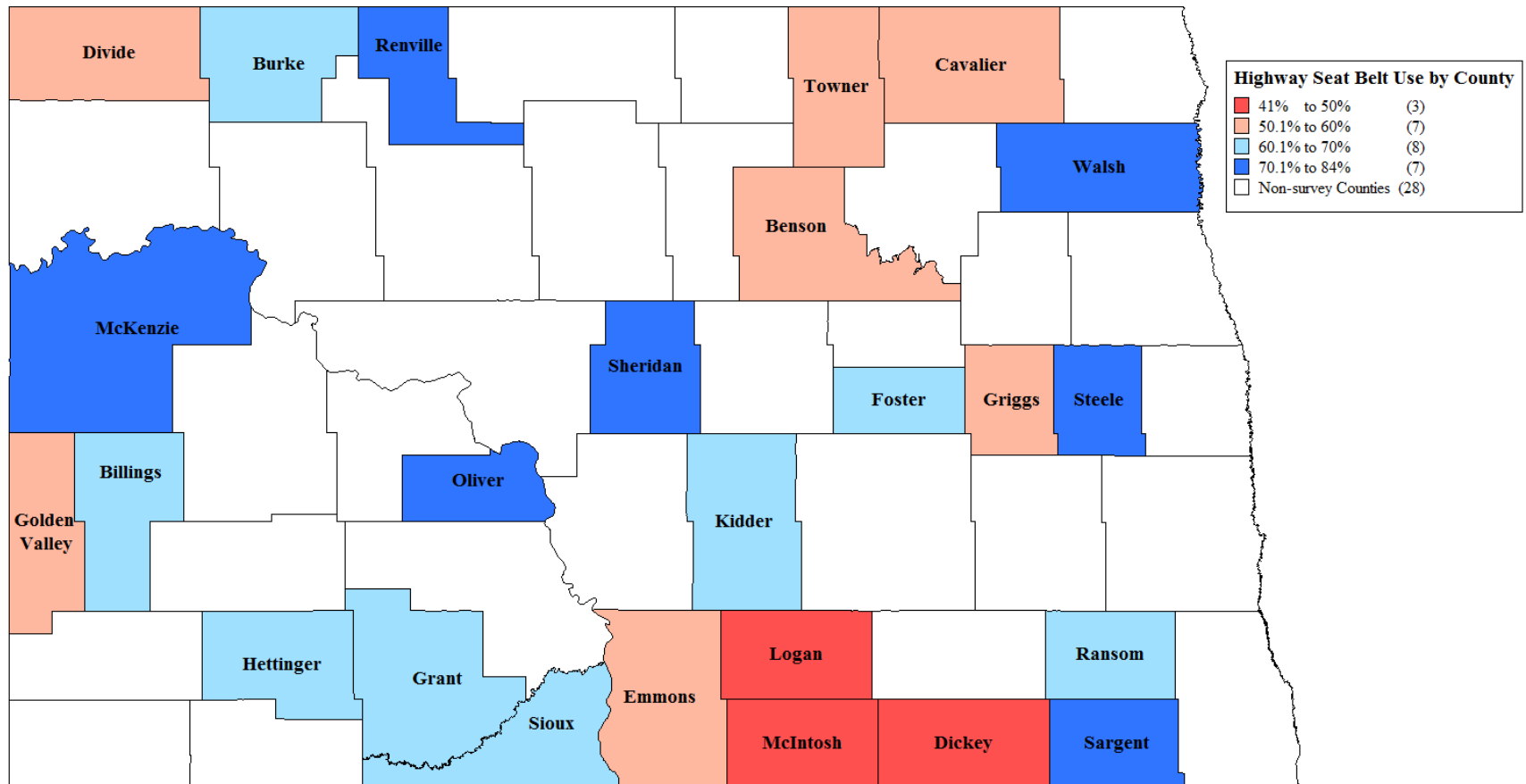
Statewide Seat Belt Survey Counties – Comparison



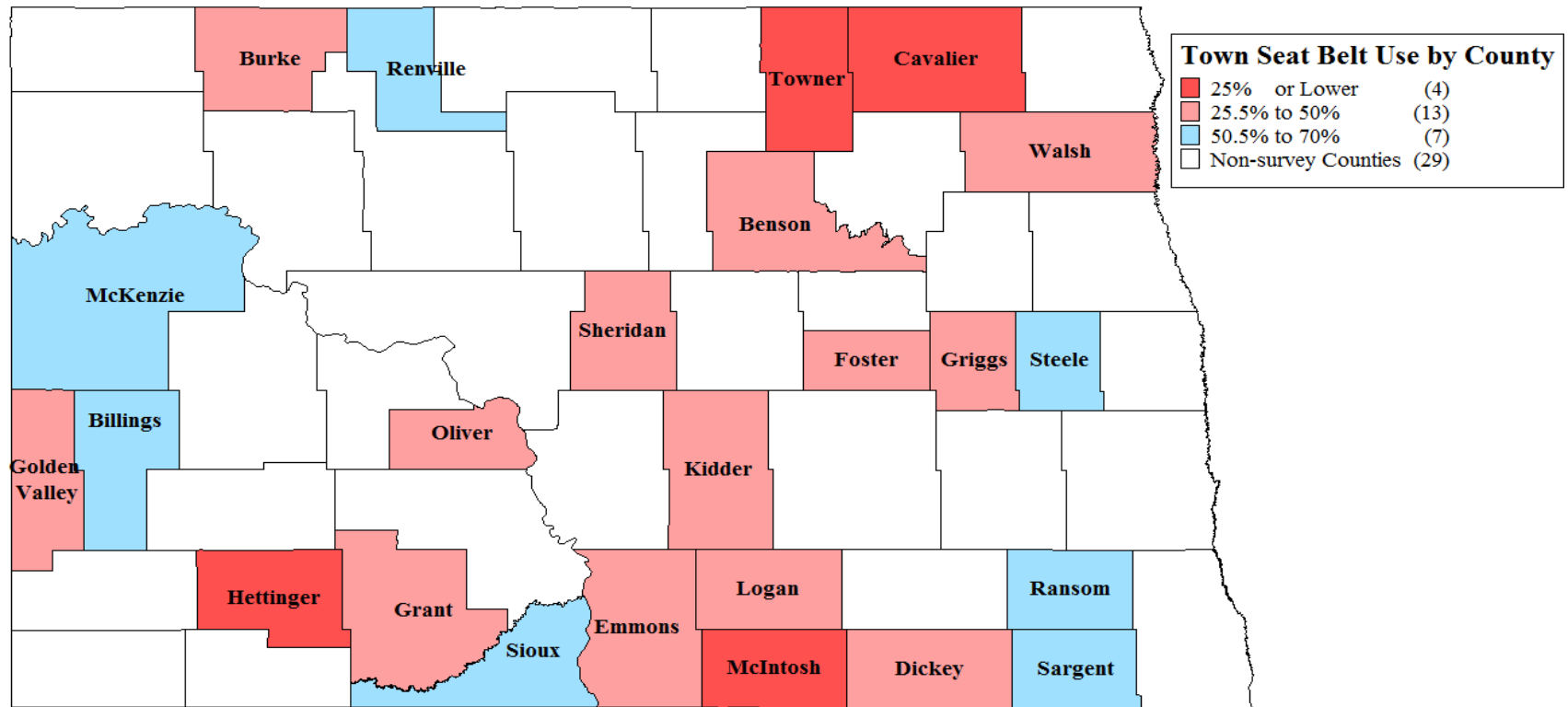
'Overall' Seat Belt Use Rates



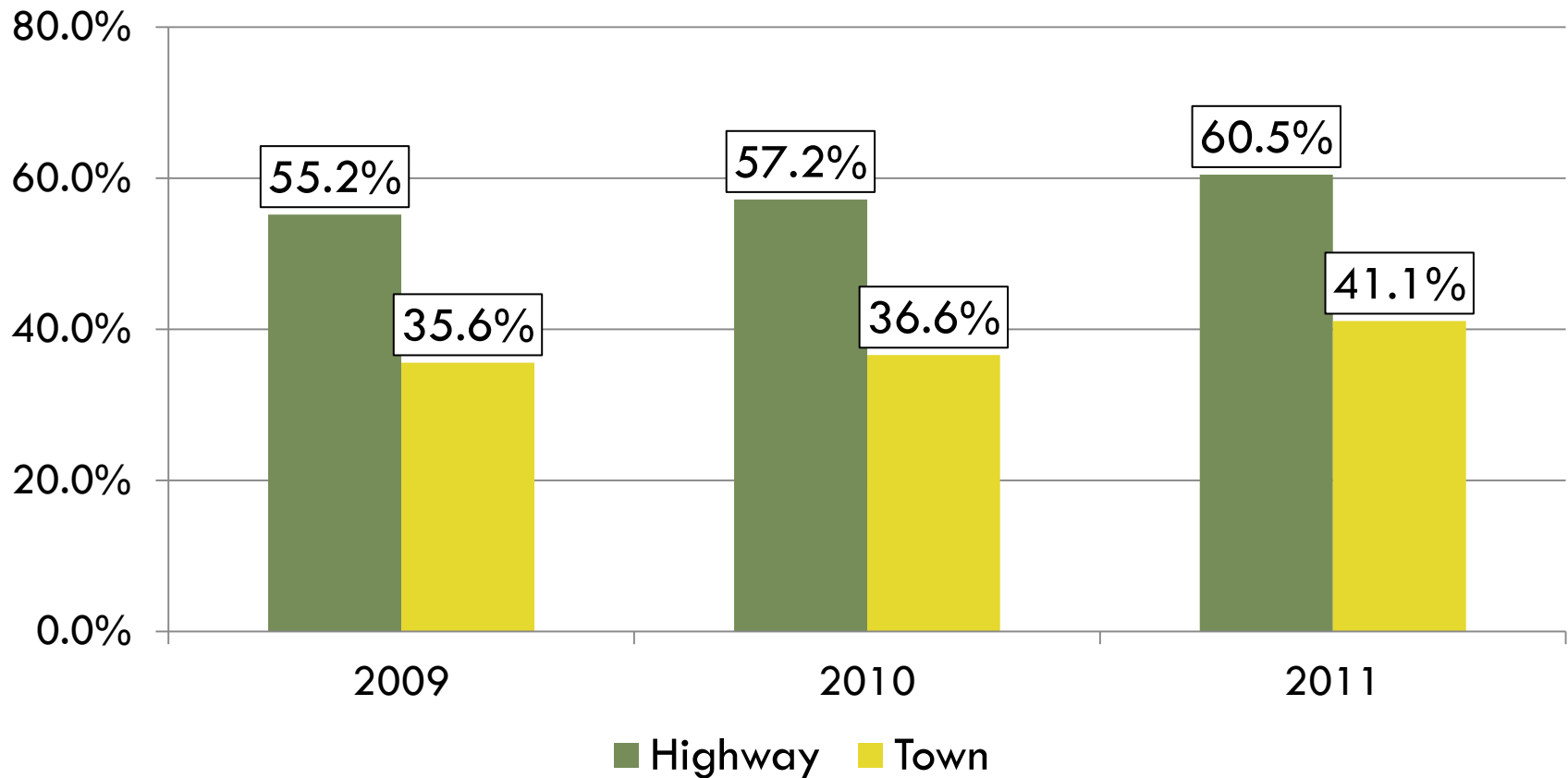
Highway Seat Belt Use by County: 2011



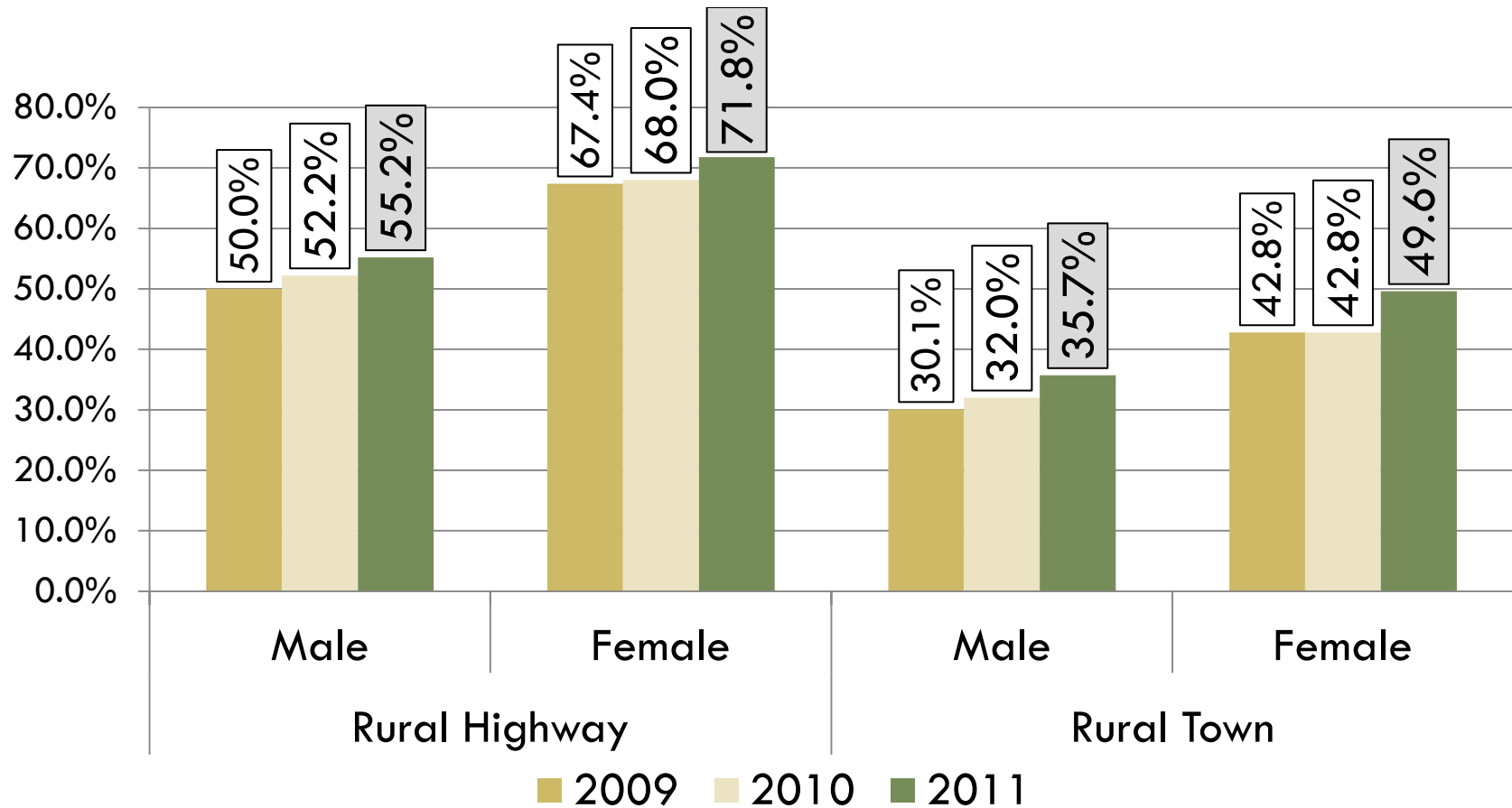
Town Seat Belt Use by County: 2011



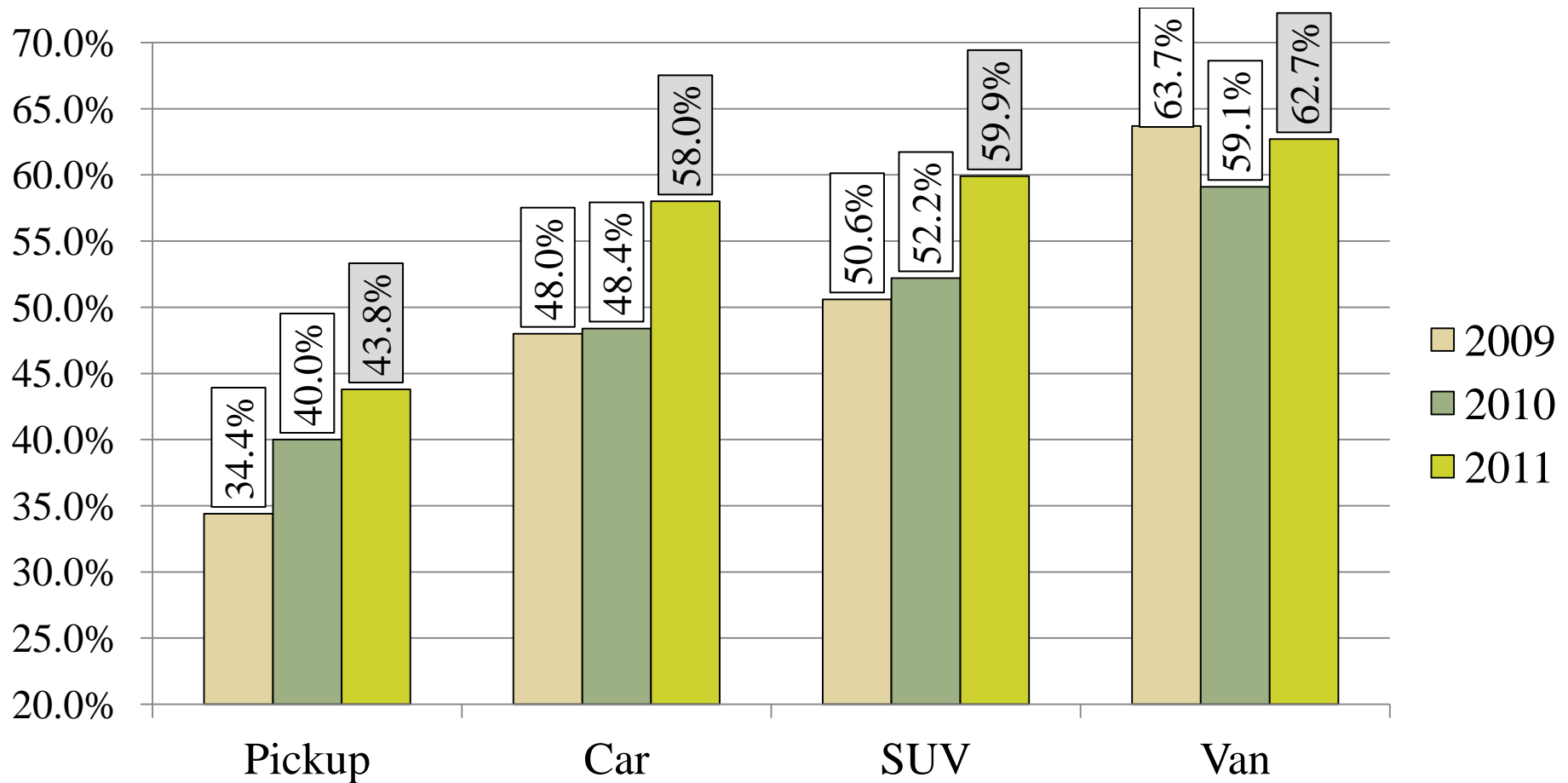
Seat Belt Use by Road Type



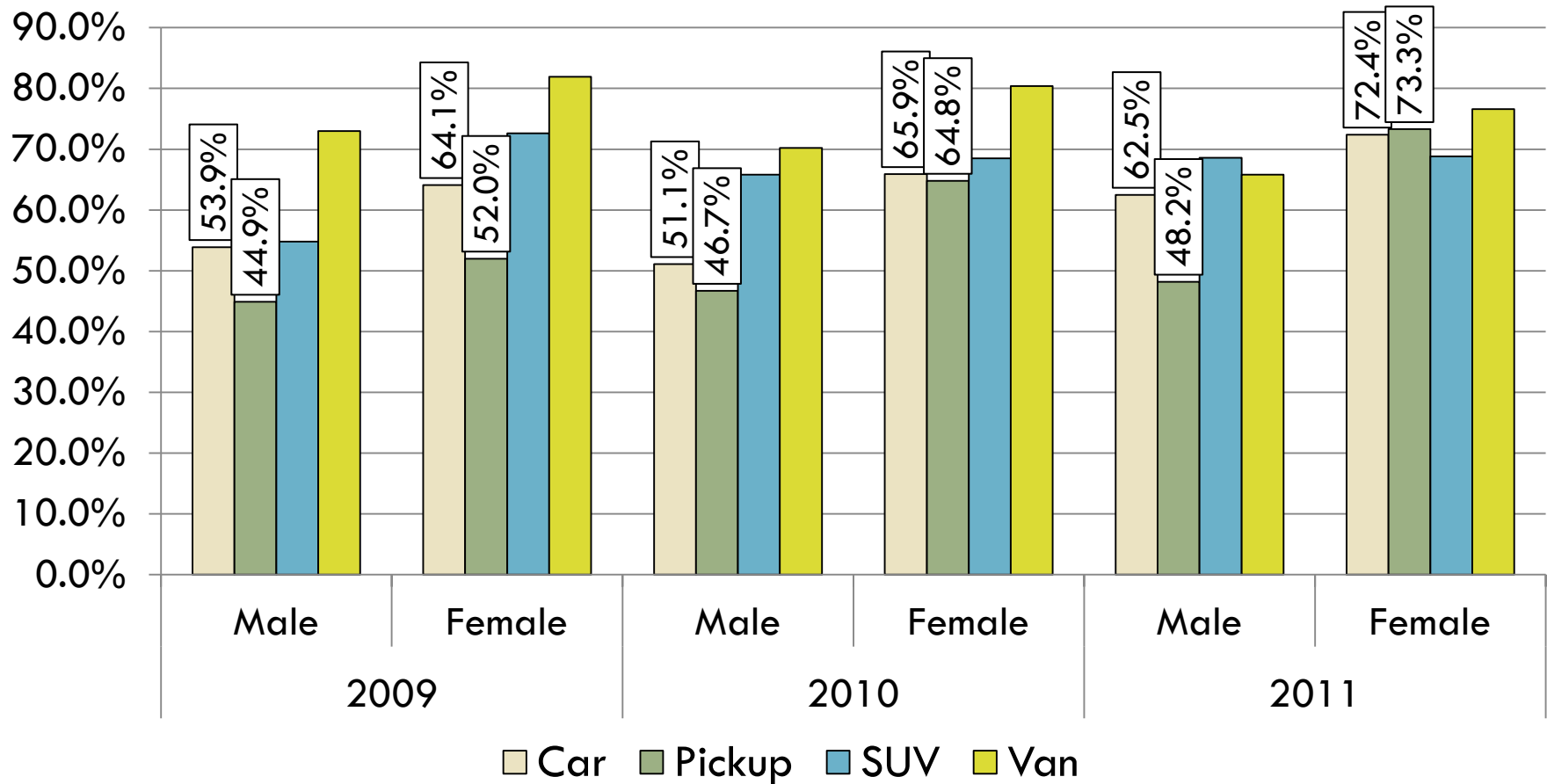
Seat Belt Use by Road Type and Driver Gender



Seat Belt Use by Vehicle Type



Seat Belt Use by Vehicle Type and Gender – Highway



In Conclusion

- Difference in seat belt use for Statewide Seat Belt Survey and Rural Seat Belt Survey
- In North Dakota, use rate found to be lower:
 - In rural areas (especially towns)
 - For pick-up trucks
 - For males
- ND seat belt use rates have increased slightly in recent years, although use continues to be lower than the U.S. overall

Questions?

www.ugpti.org/rtssc

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